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CUSTOMERS FIRST

## **Eland Solar and Storage Center Phase 1 and Phase 2**

***LADWP Board of Water and Power Commissioners  
June 18, 2019***



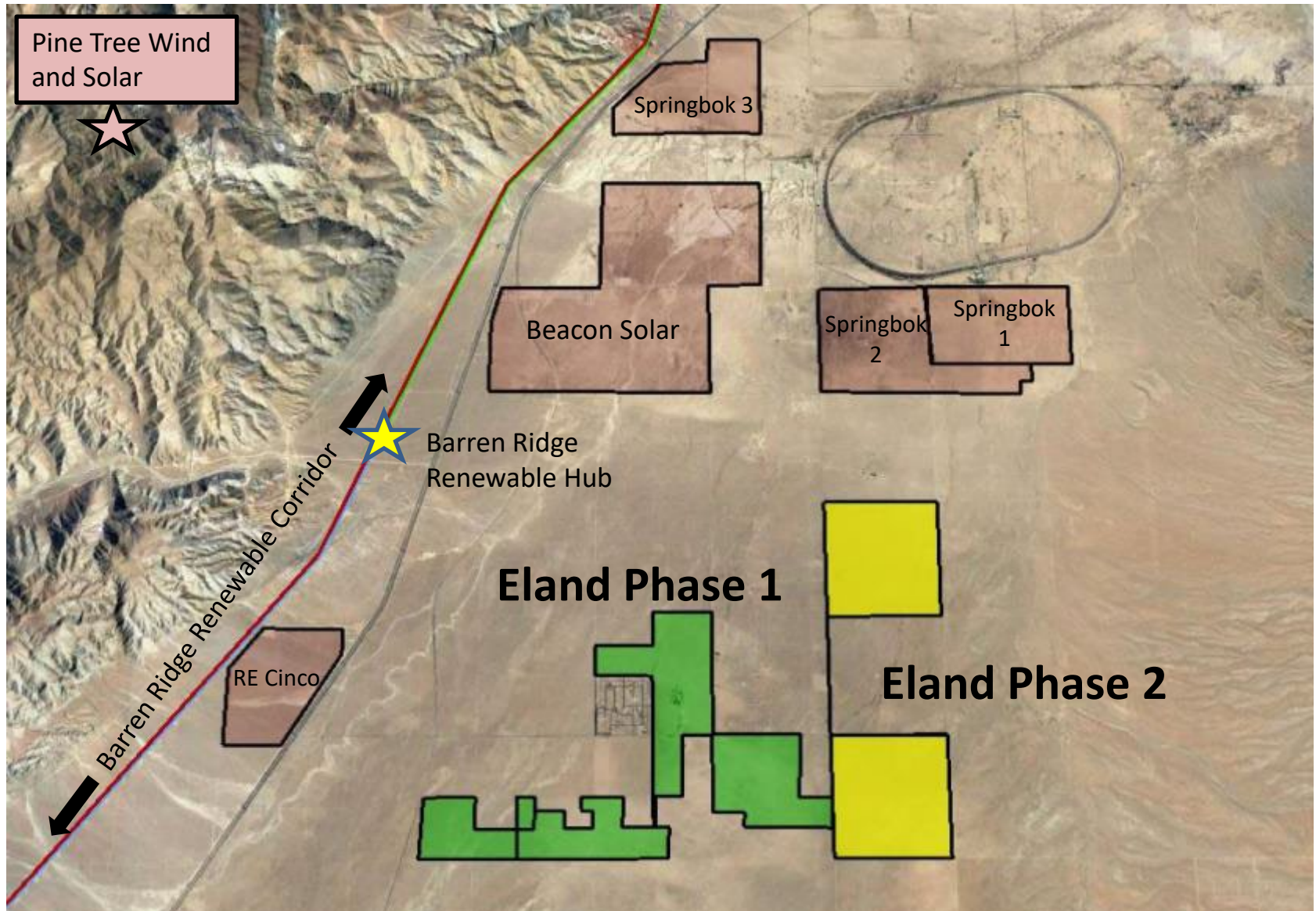
# Eland 1 & 2 - Solar & Battery Storage

## Best Fit, Least Cost

- Competitive RFP Process with Over 130 Offerings.
- Low cost of \$19.97/MWh **LOWEST SOLAR PHOTOVOLTAIC PRICE IN THE U.S.**
- Low cost of \$13.00/MWh for Battery System
- In service by end of 2023
- Battery Increases System Reliability & Operability
- Maximize Existing Transmission Capacity
- Future ownership options

**LARGEST AND LOWEST COST COMBINED  
SOLAR AND HIGH CAPACITY BATTERY ENERGY  
STORAGE PROJECT IN THE U.S.**

# Project Location





# Project Summary – Eland Phase 1 & Phase 2

	Eland Phase 1	Eland Phase 2
Solar Technology	Single Axis Tracking Solar PV	
Term	25 Years	
Total Capacity	200 MW	
Solar Price	\$19.97/MWh	
BESS Size	100MW/4-hour (400MWh)	
BESS Price Adder	\$13.00/MWh	
LADWP Share:	87.5%	100.0%
Glendale Share	12.5%	N/A
RPS % in 2025	3.1%	3.5%
Early Buyout Option (EBO)	15, 20, and 25 year anniversary of Commercial Operation Date	
EBO price	Based on Fair Market Price	



## Battery Option for each project to increase to 150MW/4-hour (600MWh)

Price Adder	\$6.65/MWh	
RPS Percentage in 2025	3.3%	3.8%



# Benefits of Battery Energy Storage System (BESS)

## System Benefits:

- Eland Satisfies SB801 and AB2514 energy storage legislation
- Store solar energy for evening hours
- Reduce “Evening Ramp” when sun sets
- Firm and shape energy – improves reliability
- Provides grid services – mimic traditional generation
- 80 to 120 times larger than Beacon



Current Beacon 20MW BESS located near future Eland BESS

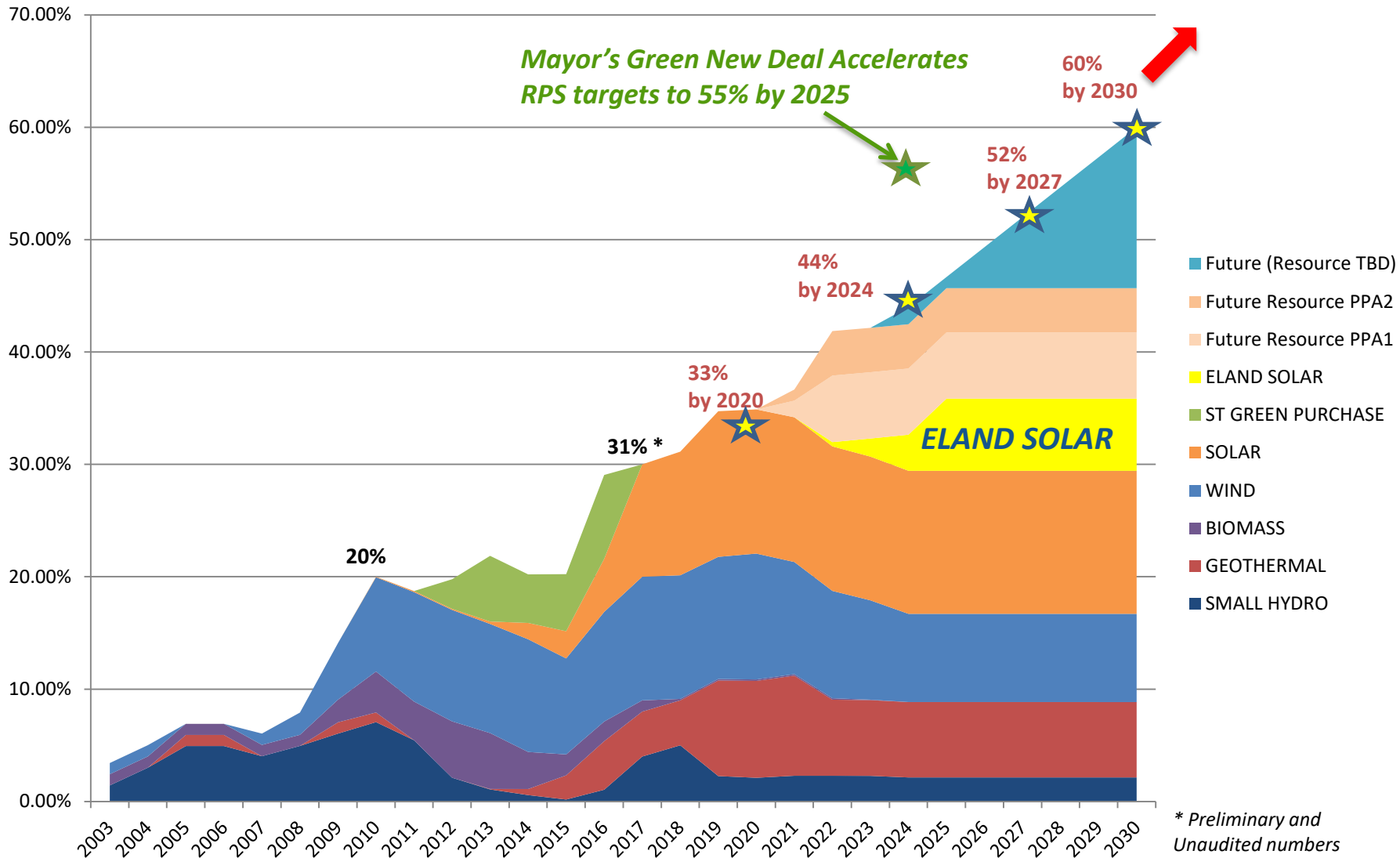
# Power Purchase Agreement Milestone Dates

## Eland Phase 1 and Phase 2 Schedule:

- April 9, 2019 Environmental Impact Study Approved
- Oct 31, 2022 Deliver a Notice to Proceed with Construction
- April 30, 2023 First MW of Solar Capacity Installed and is Capable of Delivering
- May 31, 2023 Achieve initial synchronization
- Dec 31, 2023 Guaranteed Commercial Operation Date (COD)



# CONTRIBUTION OF ELAND SOLAR TO RPS GOALS



# Questions





# Southern California Public Powers Authority (SCPPA)

- Nonprofit joint power agency formed in 1980 to facilitate joint planning, financing, construction, and operation of transmission and generation projects
  - For the benefit of the Southern California municipal utilities
- SCPPA's members include LADWP, the cities of Anaheim, Azusa, Banning, Burbank, Cerritos, Colton, Glendale, Pasadena, and Riverside as well as the Imperial Irrigation District (IID).
- On April 4, 2006 and August 22, 2012, the Board approved the SCPPA Phase I and Phase II Renewable Development Agreements
  - Authorized LADWP to participate with other members of SCPPA for the purpose of investigating and performing due diligence on potential new renewable resource options.

# Power Purchase Agreement (PPA)

- A power purchase agreement (PPA) is a legal contract between an electricity generator (provider) and a power purchaser (buyer, typically a utility or large power buyer/trader).
  - 8minuteenergy = provider
  - SCPPA = buyer
- PPA benefits
  - Developer is able to take advantage of the 30% Investment Tax Credit (ITC)
    - Unavailable to governmental agencies such as LADWP
    - ITC savings are passed on to LADWP through reduced PPA prices
  - Developer assumes all the risk
  - No upfront capital cost
  - Long-term fixed energy price
  - Developer is required to provide a minimum pre-determined amount of annual energy
    - Developer is required to maintain facility properly
    - Predictable energy amount leads to better system planning

# Power Sales Agreement (PSA) and Agency Agreement (AA)

SCPPA Power Purchase Agreement (PPA) requires a Power Sales Agreement (PSA) and an Agency Agreement (AA). These are contractual obligations by LADWP to SCPPA as follows:

Under the terms of the PSA, LADWP contractually agrees:

- To pay for the delivery of solar power produced by the projects
  - Fixed price with no escalation
  - Includes green energy attributes

Under the terms of the AA, LADWP contractually agrees:

- To be the Project Managers
  - Manage and administer contracts on behalf of project participants